

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1-11. (Canceled)

12. (Currently Amended) A method for producing a high-purity silicon carbide sintered body, comprising:

preparing a slurry by dispersing silicon carbide powder in a solvent;

forming a molded body by pouring the slurry into a mold;

impregnating the molded body with an organic substance comprising at least one kind of carbon source;

effecting calcination of the slurry in a vacuum atmosphere or in an inert gas atmosphere; and

sealing pores within the calcined molded body by impregnating the pores with high purity metal silicon molten by heating, and allowing the high purity metal silicon and carbon contained in the molded body to react on each other in the pores so as to produce silicon carbide

wherein the silicon carbide powder is obtained by a process for preparing silicon carbide powder, comprising:

producing silicon carbide powder by homogeneously mixing a silicon source comprising at least one selected from tetraalkoxysilane and polymers of tetraalkoxysilane, each of high purity, and a carbon source comprising an organic compound of high purity which generates carbon upon heating, and heating and firing the mixture in a non-oxidizing atmosphere; and

effecting post-treatment in which the obtained silicon carbide powder is kept at a temperature from equal to or higher than 1,700°C to lower than 2,000°C and carrying out

heat treatment at a temperature between 2,000°C and 2,100°C for 5 to 20 minutes at least once.

13. (Previously Added) The method for producing a silicon carbide sintered body according to claim 12, wherein an average grain size of the silicon carbide powder is 0.01 to 10 μ m.
14. (Canceled)
15. (Currently Amended) The method for producing a silicon carbide sintered body according to claim 12, wherein the silicon source is a polymer of tetraalkoxysilane and the carbon source is a phenol resin.
16. (Previously Added) The method for producing a silicon carbide sintered body according to claim 12, wherein the silicon carbide powder includes impurity elements of which each content is 0.5 ppm or less.
17. (Previously Added) The method for producing a silicon carbide sintered body according to claim 12, wherein the step of calcination is carried out at temperature from 1500 to 1900°C.
18. (Previously Amended) The method for producing a silicon carbide sintered body according to claim 12, wherein the carbon content of the organic substance impregnated in the molded body during the calcination is 10 to 30 wt%.
19. (Previously Added) The method for producing a silicon carbide sintered body according to claim 12, wherein a substance that forms a nitrogen source is added during one of preparing the slurry and forming the molded body.